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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,851

07/12/2006

Kenji Narumi

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EXAMINER

CHU, KIM KWOK

ART UNIT

PAPER NUMBER

2627

NOTIFICATION DATE

DELIVERY MODE

10/08/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/585,851	<b>Applicant(s)</b> NARUMI, KENJI	
	<b>Examiner</b> Kim-Kwok CHU	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Pre-Amendment filed on July 12, 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 28-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28-68 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### ***Claim Objections***

1. Claims 38, 41, 67 and 68 are objected to because of the following informalities:

Regarding claim 38, line 2, the term "the power coefficient" should be changed to --a power coefficient-- because the independent Claim 28 does not contain the word "power coefficient";

Regarding claim 41, line 2, term "the power coefficient" should be changed to --a power coefficient-- because the independent Claim 33 does not contain the word "power coefficient";

Regarding Claim 67, line 2, term "the power coefficient" should be changed to --a power coefficient-- because the independent Claim 55 does not contain the word "power coefficient"; and

Regarding Claim 68, line 2, term "the power coefficient" should be changed to --a power coefficient-- because the independent Claim 55 does not contain the word "power coefficient".

Appropriate correction is required.

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***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

3. Claims 28-68 are rejected under 35 U.S.C. § 102(b) as being anticipated by Nakajo (U.S. Patent 6,925,042).

4. Nakajo teaches an information recording method having all of the steps as recited in claims 28-31, 35-38, 42, 44, 48, 49, 51, 52 and 54. For example, Nakajo teaches the following:

Regarding Claim 28, The optical information recording method comprising, irradiating an optical information recording medium 10 with a laser beam (Fig. 1; optical pickup 28 generates an irradiating laser beam), forming marks or spaces (recording data) so that the optical characteristics of a recording film are varied (optical recording uses a laser to burn the recording film), forming the marks by recording pulses (Fig. 1; encoded data from 46) or a recording pulse train in which the power of the laser beam is switched between a plurality of power levels including at least a recording power and erasure power (optical

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power control in 44), and recording information at two different linear velocities (Fig. 16), wherein the recording power is controlled so as to satisfy  $(P_{p1}/P_{pth1}) < (P_{p2}/P_{pth2})$  (Fig. 16), where  $P_{pth1}$  is the threshold value of the recording power at which the quality of a reproduction signal drops under a specific value when a test signal is recorded at a first linear velocity  $v_1$  (Fig. 15; threshold value is an inherent value such as the base recording power based on reading test recording) with the erasure power fixed and the recording power varied,  $P_{pth2}$  is the threshold value of the recording power at which the quality of the reproduction signal drops under a specific value when the test signal is recorded at a second linear velocity  $v_2$  that is higher than the first linear velocity  $v_1$ , with the erasure power fixed and the recording power varied (Fig. 15; threshold value is an inherent value such as the base recording power based on reading test recording) with the erasure power fixed and the recording power varied),  $P_{p1}$  is the recording power when the information is recorded at the first linear velocity  $v_1$ , and  $P_{p2}$  is the recording power when the information is recorded at the second linear velocity  $v_2$  (Figs. 15 and 16).

Regarding Claim 29, the criterion for the quality of the reproduction signal is the jitter of the reproduction signal (Fig. 12).

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Regarding Claim 30, the criterion for the quality of the reproduction signal is a value based on the error rate of the reproduction signal (Fig. 4).

Regarding Claim 31, the quality of the reproduction signal is a value based on the degree of modulation (demodulation) of the reproduction signal (Fig. 4; read error determines write laser power).

Regarding Claim 35, the recording system is a CAV recording system (Fig. 6).

Regarding Claim 36, the recording power is controlled so that  $P_p$  is increased according to the increase in a linear velocity  $v$  when  $P_p$  is the recording power at the linear velocity  $v$ , which is a value between the first linear velocity  $v_1$  and the second linear velocity  $v_2$  (Fig. 13).

Regarding Claim 37, the power level between recording pulses is controlled to be different from the erasure power (inherent feature).

Regarding Claim 38, the power coefficient between recording pulses at the second linear velocity  $v_2$  is controlled to be higher than a power coefficient between recording pulses at the first linear velocity  $v_1$  when the power coefficient between recording pulses is  $\alpha$  and  $\alpha = (P_{b_{tm}} - P_b)/(P_p - P_b)$ , where  $P_p$  is the recording power,  $P_b$  is the erasure power, and  $P_{b_{tm}}$  is the

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power level between recording pulses (Figs. 13 and 15; linear relationship of power based on liner velocity).

Regarding Claim 42, information expressing the value of  $Pp1/Pp_{th1}$  and  $Pp2/Pp_{th2}$  is recorded (Figs. 13 and 14; information recorded on the medium uses and expresses the claimed value).

Regarding Claim 44, information expressing the value of  $Pp1$  and  $Pp2$  is recorded (Figs. 13 and 14; information recorded on the medium uses and expresses the claimed value).

Regarding Claim 48, the recording film is composed of a phase changing material (CD or DVD rewritable), and the phase changing material contains germanium and tellurium, and also contains either tin or bismuth (rewritable materials in CD or DVD).

Regarding Claim 49, the recording film is composed of a phase changing material, and the phase changing material contains germanium and tellurium, and also contains either tin or bismuth (rewritable materials in CD or DVD).

Regarding Claim 51, the optical information recording medium having a track divided into a plurality of sectors, having embossed tracks between the sectors, and the tracks being formed such that the center of the embossed tracks is shifted from the center of the recording tracks of the sectors (inherent

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CD or DVD formats).

Regarding Claim 52, the optical information recording medium having a track divided into a plurality of sectors, having embossed tracks between the sectors, and the tracks being formed such that the center of the embossed tracks is shifted from the center of the recording tracks of the sectors (inherent CD or DVD formats).

Regarding Claim 54, the optical information recording medium having a track divided into a plurality of sectors, having embossed tracks between the sectors, and the tracks being formed such that the center of the embossed tracks is shifted from the center of the recording tracks of the sectors (inherent CD or DVD formats).

5. Claims 32, 43 and 45 have limitations similar to those treated in the above rejection, and are met by the references as discussed above.



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6. Claims 33, 39, 40, 41, 46, 50 and 53 have limitations similar to those treated in the above rejection, and are met by the references as discussed above. Claim 33 however also recites the following limitation which is also taught in the prior art of Nakajo:

Regarding Claim 33, the recording power is controlled so as to satisfy  $a_1 \leq a_2$ , where  $a_1$  is the asymmetry of the reproduction signal (error or jitter) when a test signal is recorded at a first linear velocity  $v_1$ , with the erasure power fixed and the recording power varied, and  $a_2$  is the asymmetry of the reproduction signal when the test signal is recorded at a second linear velocity  $v_2$  that is higher than the first linear velocity  $v_1$ , with the erasure power fixed and the recording power varied (Fig. 4).

7. Claims 34 and 47 have limitations similar to those treated in the above rejection, and are met by the references as discussed above. Claim 34 however also recites the following limitation which is also taught in the prior art of Nakajo:

Regarding Claim 34, wherein the recording power is controlled so as to satisfy  $a_1 \leq a_2$ , where  $a_1$  is the asymmetry of the reproduction signal when a test signal is recorded at a first linear velocity  $v_1$ , with the erasure power and the

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recording power varied such that the ratio between these powers is constant, and  $a_2$  is the asymmetry of the reproduction signal when the test signal is recorded at a second linear velocity  $v_2$  that is higher than the first linear velocity  $v_1$ , with the erasure power and the recording power varied such that the ratio between these powers is constant (Fig. 4).

8. Apparatus claims 55-58, 62, 63, 65 and 67 are drawn to the apparatus corresponding to the method of using same as claimed in claims 28-31 and 35-38. Therefore apparatus claims 55-58, 62, 63, 65 and 67 correspond to method claims 28-31 and 35-38, and are rejected for the same reasons of anticipation as used above.

9. Apparatus claim 59 is drawn to the apparatus corresponding to the method of using same as claimed in claim 28. Therefore apparatus claim 59 corresponds to method claim 28, and is rejected for the same reasons of anticipation as used above.

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10. Apparatus claim 61 is drawn to the apparatus corresponding to the method of using same as claimed in claim 33. Therefore apparatus claim 61 corresponds to method claim 33, and is rejected for the same reasons of anticipation as used above.

11. Apparatus claims 60, 64, 66 and 68 are drawn to the apparatus corresponding to the method of using same as claimed in claims 33 and 39-41. Therefore apparatus claims 60, 64, 66 and 68 correspond to method claims 33 and 39-41, and are rejected for the same reasons of anticipation as used above.

### ***Related Prior Art***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yokoi (2003/0156519) is pertinent because Yokoi teaches a laser power control based on liner velocity of the rotating information medium.

Naoi (2003/0072235) is pertinent because Naoi teaches a laser power control based on liner velocity of the rotating information medium.

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13. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

/Kim-Kwok CHU/  
Examiner AU2627  
September 30, 2010  
(571) 272-7585

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627